What is Claimed:

1. A device for converting at least four parallel data streams on respective input data lines into one serial data stream on a fiber optic data line, the device comprising:

a first multiplexer for multiplexing at least two of the parallel data streams into a first intermediate output stream;

a second multiplexer for multiplexing at least two other of the parallel data streams into a second intermediate output stream;

a serializing transmitter coupled to the first and second multiplexers for serializing the first and second intermediate output streams into the serial data stream, and

a signal for synchronizing the serializing of the first and second intermediate output streams and tagging output data in the serial data stream as corresponding with data from each of the respective input data lines.

2. The device of claim 1 including an optical transmitter for transmitting the serial data stream onto the fiber optic data line.

3. The device of claim 1 wherein the data from each of the respective input data lines is 9 bits wide and an output frame in the serial data stream is 24 bits long.

4. The device of claim 3 wherein the signal includes a cycle having a first phase and a second phase, the first phase for tagging the output frame

to the data from two of the respective input data lines and the second phase for tagging the output frame to the data from another two of the respective input data lines.

5. The device of claim 3 wherein a parity generator is coupled between the first multiplexer and the serializing transmitter for adding a parity bit to one of the respective input data lines.

6. A device for converting a serial input data stream on a fiber optic data line to at least four parallel data streams on respective output data lines, the device comprising:

a receiver for de-serializing the input data stream into first and second intermediate parallel data streams,

a first demultiplexer for demultiplexing the first intermediate parallel data stream into two parallel data streams on two respective output data lines;

a second demultiplexer for demultiplexing the second intermediate parallel data stream into two other parallel data streams on two other output data lines; and

a signal for synchronizing the de-serializing of the first and second intermediate output streams and tagging data in the serial input data stream as corresponding to data in each of the respective output data lines.

7. The device of claim 6 wherein the receiver includes an optical receiver for receiving the serial input data stream from the fiber optic data line.